

WE CLAIM:

1. A method of reacting carboxylic acids comprising, using electrodes to apply an electrical voltage between opposite ends of a channel containing a liquid, providing first and second carboxylic acid molecules, each carboxylic acid molecule having a carbon atom α to a carboxylic acid group, the electrical voltage causing said carboxylic acid molecules to react together with the loss of said carboxylic acid groups and the formation of a product molecule in which a bond links said α carbon atoms together, said reaction taking place in the liquid in the channel and spaced from the electrodes.
2. A method according to claim 1, wherein the electrical voltage causes electro-osmotic movement of the liquid along the channel.
3. A method according to claim 1, wherein the channel has a maximum cross-sectional dimension in the range of from 10 to 400 μm .
4. A method according to claim 3, wherein the maximum cross-sectional dimension is in the range from 100 to 200 μm .
5. A method according to claim 1, wherein the first and second molecules are of the same carboxylic acid.
6. A method according to claim 1, wherein the first and second molecules are of different carboxylic acids.
7. A method according to claim 1, wherein said reaction is repeated for a plurality of pairs of carboxylic acid molecules, so that each pair produces a respective product molecule, the product molecules comprising stereoisomeric forms.

8. A method according to claim 1, wherein the channel has a length and the field strength of the electric voltage in the channel is at least about 230 V/cm of said length.
9. A method according to claim 8, wherein the field strength is in the range from about 230 to about 330 V/cm of the length.
10. A method according to claim 1, wherein the channel is one of a plurality of interconnecting channels.
11. A method according to claim 1, wherein the channel is formed in an apparatus formed from two members, one of the members being provided with a groove, the groove corresponding to the channel, the other one of the members having a surface that closes the groove to form the channel.
12. A method according to claim 1, wherein the liquid is selected from the group consisting of dimethylformamide, tetrahydrofuran, methanol, dimethyl sulfoxide, ethanol and acetonitrile.
13. A method according to claim 1, wherein the channel is formed in a body formed from a material selected from the group consisting of glass, silica and quartz.
14. A method according to claim 13, wherein the material is borosilicate glass.
15. A method of reacting carboxylic acids comprising, providing first and second carboxylic acid molecules in a liquid in a channel, each carboxylic acid molecule having a carbon atom α to a carboxylic acid group, applying an electrical voltage to cause electro-osmotic movement of the liquid along the channel, the electrical voltage causing said carboxylic acid molecules to react together in the channel with the loss of said carboxylic acid groups and the formation of a product molecule in which a

bond links said α carbon atoms together.

16. A method according to claim 15, wherein the channel has a maximum cross-sectional dimension in the range of from 10 to 400 μm .
17. A method according to claim 16, wherein the maximum cross-sectional dimension is in the range from 100 to 200 μm .
18. A method according to claim 15, wherein the first and second molecules are of the same carboxylic acid.
19. A method according to claim 15, wherein the first and second molecules are of different carboxylic acids.
20. A method according to claim 15, wherein said reaction is repeated for a plurality of pairs of carboxylic acid molecules, so that each pair produces a respective product molecule, the product molecules comprising stereoisomeric forms.
21. A method according to claim 15, wherein the channel has a length and the field strength of the electric voltage in the channel is at least about 230 V/cm of said length.
22. A method according to claim 21, wherein the field strength is in the range from about 230 to about 330 V/cm of the length.
23. A method according to claim 15, wherein the channel is one of a plurality of interconnecting channels.
24. A method according to claim 15, wherein the channel is formed in an apparatus formed from two members, one of the members being provided with a groove, the

groove corresponding to the channel, the other one of the members having a surface that closes the groove to form the channel.

25. A method according to claim 15, wherein the liquid is selected from the group consisting of dimethylformamide, tetrahydrofuran, methanol, dimethyl sulfoxide, ethanol and acetonitrile.

26. A method according to claim 15, wherein the channel is formed in a body formed from a material selected from the group consisting of glass, silica and quartz.

27. A method according to claim 26, wherein the material is borosilicate glass.